

A16.3 (CD-ROM TOPIC) USING SPSS FOR TIME-SERIES FORECASTING

Using SPSS for Exponential Smoothing

To illustrate the computation of exponentially smoothed values, open the **CABOT.SAV** file. Select **Analyze**→**Time Series**→**Exponential Smoothing**.

1. In the Exponential Smoothing dialog box (see Figure A16.5), enter **revenue** in the Variables: edit box. Select the **Simple Model** option button. Click the **Parameters** button.

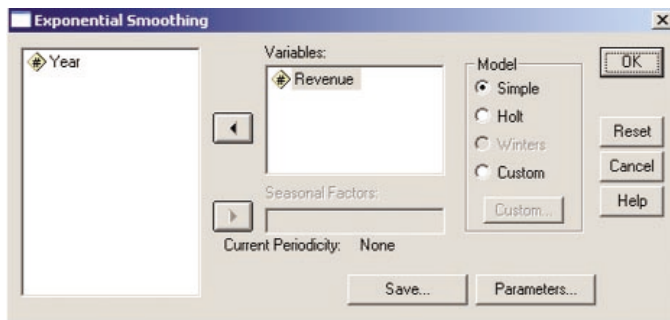


FIGURE A16.5 SPSS Exponential Smoothing Dialog Box

2. In the Exponential Smoothing: Parameters dialog box (see Figure A16.6), in the General(Alpha) section, select the **Value** option button and enter **.25** in the edit box for a W value of 0.25. In the Initial Values section, select the **Custom** option button. Enter the value of the first observation in the time series (**1588** for the Cabot data) in the Starting: edit box. Enter **0** in the Trend: edit box. Click the **Continue** button. Click the **Save** button.

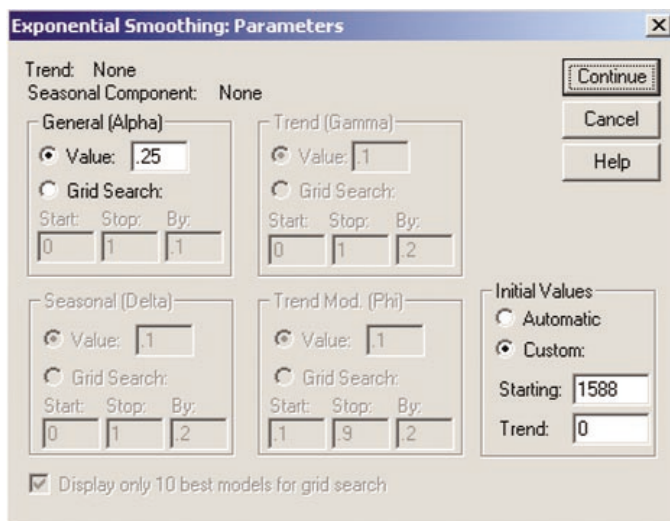


FIGURE A16.6 SPSS Exponential Smoothing: Parameters Dialog Box

3. In the Exponential Smoothing: Save dialog box (see Figure A16.7), in the Create Variables section, select the **Add to file** option button. In the Predict Cases section, select the **Predict from estimation period through last case** option button. Click the **Continue** button. Click the **OK** button. You have now added two variables to the data file, the predicted value and the residual (i.e., the difference between the observed and predicted values).

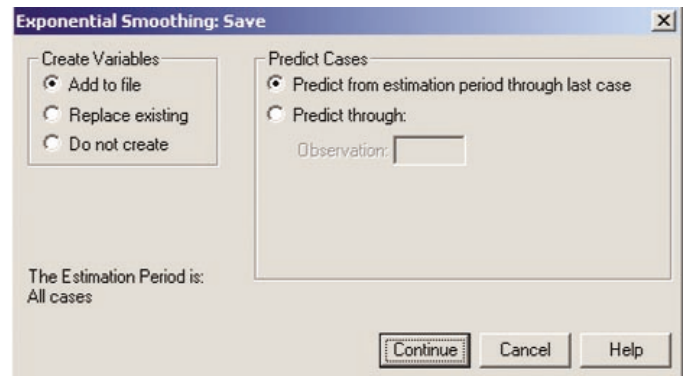


FIGURE A16.7 SPSS Exponential Smoothing: Save Dialog Box

Using SPSS for Least-Squares Trend-Fitting

In Chapters 13 through 15, you used SPSS for the simple linear regression model and for a variety of multiple regression models. In this chapter, time-series models were developed assuming either a linear, quadratic, or exponential trend. For the linear trend model, see Appendix A13.3. For the quadratic model and the exponential models, see Appendices A14.3 and A15.3.

Using SPSS for Autoregressive Modeling

In order to use SPSS for autoregressive models, you need to create lagged variables. To accomplish this, open the **WRIGLEY.SAV** file. Select **Transform** → **Compute**.

1. In the Compute Variable dialog box (see Figure A16.8), enter the name of the new variable (such as **Lag3**) in the Target Variable: edit box. Select the **LAG(variable, ncases)** function and enter this function in the Numerical Expression: edit box. In this function, *variable* refers to the variable to be lagged and *ncases* refers to the number of periods the variable is to be lagged. Select **real revenue** and enter this as the *variable* in the Numerical Expression: edit box. For a lagged variable of three time periods, enter **3** for *ncases* in the Numerical Expression: edit box. Click the **OK** button.

- Repeat this procedure for lags of one and two periods by changing the name of the new variable to lag1 and lag2, and the values for *ncases* to 1 and 2, respectively. Once the lagged variables are formed, use **Analyze** → **Regression** → **Linear** as in Appendices A13.3, A14.3, and A15.3.

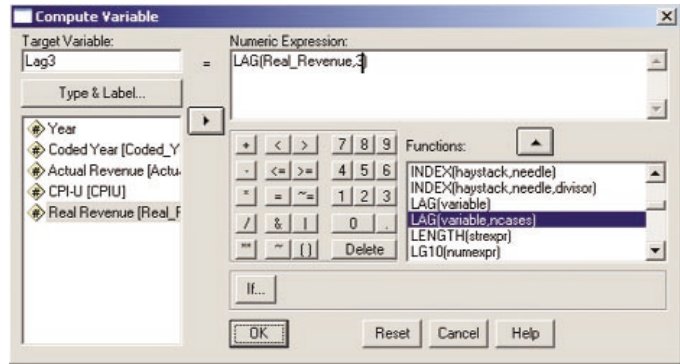


FIGURE A16.8 SPSS Compute Variable Dialog Box